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User's Manual

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elMaster interconnect

a product from



elMaster interconnect is one of the products in the elMaster Power Concept from Sigma Power Software AB. elMaster Power Concept is a comprehensive series of applications with the purpose of making designers' and draughtsmen's work easier and more efficient.

The products included in the elMaster Power Concept are elMaster design, elMaster project, elMaster connect, and elMaster interconnect.

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User's Manual

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Sigma Power Software AB, Teknikringen 8, S-583 30 Linköping, Sweden

Phone: +46 13 23 42 00, Fax: +46 13 21 00 81

www.ps.sigma.se

Table of Contents

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CHAPTER 1

Introduction

e/Master Power Concept 7

e/Master design 8

e/Master project..... 9

e/Master connect..... 9

e/Master interconnect 9

This Manual 10

Conventions in the manual..... 11

System requirements 12

Installation 12

CHAPTER 2

Quick Tour

The Drawing Tour 13

 Create Circuit Diagram..... 13

 Start interconnect..... 14

 Main form 14

 Edit sew order 15

 Assign wires with automatic numbering..... 16

 Assign cables..... 17

 Create connection report 17

 Print report 19

Reference

Database Login dialog.....	21
Main form.....	22
File menu	23
Edit menu.....	23
Configuration menu	24
Help menu.....	24
Configuration dialog.....	25
General.....	25
Sewing	26
Numbering	27
How do the rules work?	28
Default rule	28
Counters	29
How does the counter work?	30
Article Lookup.....	31
Edit Connection Point dialog.....	32
Edit Cores/Wires dialog	34
Connection tab.....	34
Filtering.....	34
Sorting.....	37
Object Information.....	37
Edit Cable/Wire.....	38
Remove	38
Auto Numbering.....	39
Paste Cores.....	39
Change Article.....	39
Cable tab	40
Filtering.....	40
Create Preliminary Cables/Wires	42
Remove	42
Copy/Paste Cores.....	42
Article Lookup dialog	44
Using filters.....	45
Category filter.....	45
Optional filter.....	45
Cable Designation dialog.....	46

Get Article.....	46
Get Cable	47
Show more data	47
Designation Lookup dialog.....	48
Designation filter.....	48
Category filter.....	49
Document filters	49
Select Project Identity dialog.....	51
About eMaster interconnect dialog	52
Reports	52
Report dialog.....	52
Document Data.....	54
Main Data tab.....	55
Additional Data	56
Filter Options	57
Cable Category filter.....	57
Object Category filter	57
Designation filter.....	58
Terminal filter	58
Connection Status filter	58
Connection Type filter	58
Format Options.....	59
Sorting.....	59
Page Format Options	60
Page Numbering	60
Printing	61
Revision handling for reports	63
PARTEX markings	64
How too create your R-format text-file	64
Create a partex document	64
Select filter options.....	64
Select format options	64
Create the text-file.....	65
Partex Configuration dialog.....	65
Cable/Wire marking	65
Cablepart Marking.....	66
Cable color and part color	66
Back to back markings.....	66
Packing.....	66
Order information.....	66
Example file.....	67



APPENDIX A

Configuration

Variables in *e*/Master interconnect 69

APPENDIX B

Number Format

Number Format Models 71

Number Format Elements 71

CHAPTER I

Congratulations for choosing eIMaster interconnect from Sigma Power Software AB.

eIMaster interconnect is one of the products in eIMaster Power Concept.

In order to be able to use the system fully, you need to know what the system is capable of doing and how to handle it in the best possible way. A good start is to read this manual. Take all the time necessary.

eIMaster Power Concept

eIMaster Power Concept is a series of products with a comprehensive family of applications and programs aimed to rationalize and render the design work for the electrical designer. The products included in the eIMaster Power Concept are:

- *eIMaster design*
- *eIMaster connect*
- *eIMaster project*
- *eIMaster interconnect*

The products are developed to integrate in networks and have common base functions and working methodology, which will make it easy for you to recognize the different products.

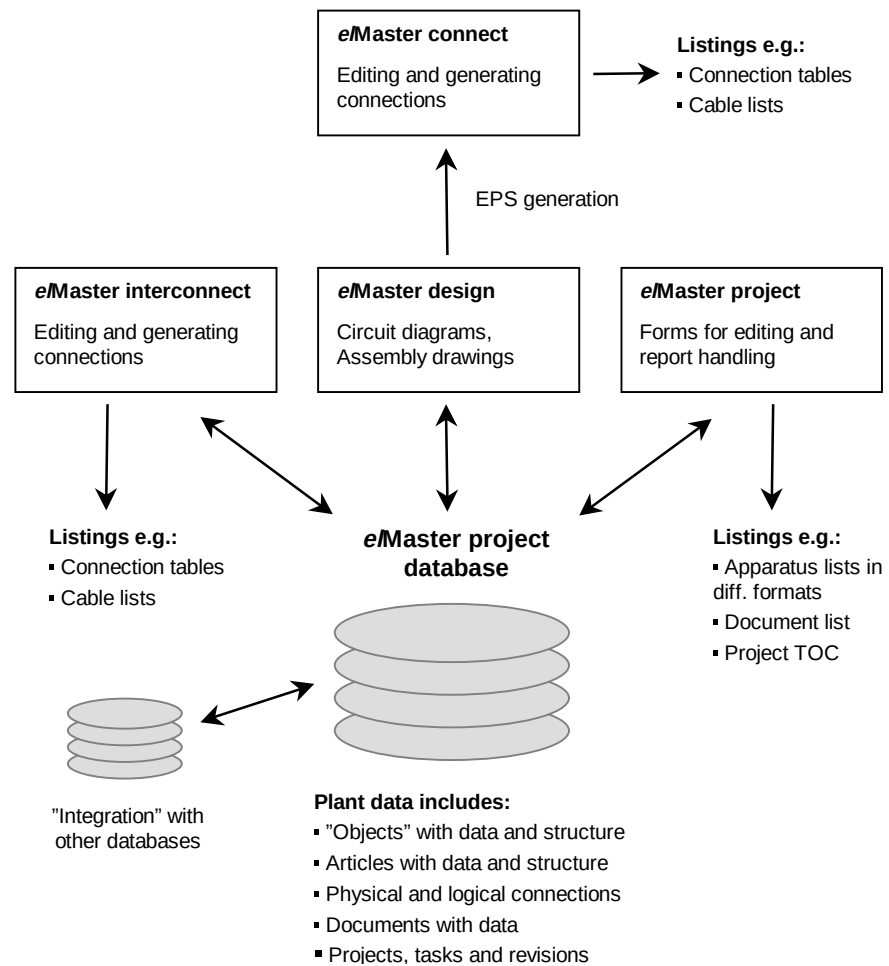


Figure 1. An overview picture of eMaster Power Concept

eMaster design

eMaster design is based on AutoCAD™ and designed to modernize and rationalize the design process. With eMaster design lead times can be shortened considerably when more or less complete design solutions easily can be reused. Company standards in the form of ready-made circuit

diagrams lead to fewer errors and major gains in efficiency, especially in large organizations with local design offices.

e/Master design complies the Swedish and European Standard (IEC) where applicable.

***e/Master* project**

e/Master project is used in electrical engineering for managing plant structures from simple junction boxes to partial or complete power plants.

Together with other programs in the *e/Master* Power Concept, *e/Master* project is used to rationalize the design process. All information is stored in a common plant database to facilitate project engineering, operation and maintenance.

The open database structure permits communication with other systems such as maintenance, purchasing and TDM systems (technical documentation management) and article files. *e/Master* project saves both time and money for plant owners, consultants and suppliers.

***e/Master* connect**

e/Master connect is used for automatic generation of connection tables from circuit diagrams created in *e/Master* design.

The connections are presented in various tables and lists, adapted to production, installation, and maintenance.

Connections are generated and optimized according to most industry standards to enable simple, efficient installation. The user can also control optimization with his own rules.

***e/Master* interconnect**

e/Master interconnect is the new interactive electrical connection program in *e/Master* Power Concept.

e/Master interconnect works with the same database as *e/Master* project and *e/Master* design. When an apparatus is saved from *e/Master* design, the connections between the terminals are also saved in the database.

With *e*/Master interconnect you can:

- Change the sequence order for a subnet interactively.
- Assign wire numbers manually and/or use automatic rules for assigning wire numbers.
- Assign wire articles manually and/or automatically.
- Assign cable numbers manually.
- Assign cable articles manually.
- Create different cable reports and connection reports.

This Manual

This manual is divided into two main chapters.

- **Quick tour**
A short introduction to *e*/Master interconnect
- **Reference**
A more detailed description on each detail in the program.

Conventions in the manual

In this manual, the following typographical conventions are used.

Examples of conventions	Description
install	Words or characters that you should type are in bold print. Also buttons that are shown in dialogs, which you should click, are shown in bold print.
<i>apparatus</i>	Italic print is used for labels in dialogs and names of dialogs and windows. Italic print is also used for guidelines.
ELMASTER.INI	Words printed in capital letters are file names or directories.
ENTER	Small caps are used for key names or key combinations e.g. ENTER, DELETE and CTRL+V
CTRL+V	A plus (+) between key names states that this is a key combination. This means that you should keep the first key pressed while you press the second one.
File; Reports	A choice from a menu is given in bold print. The text on the right side of the sign ; tells you that it is a sub menu.

System requirements

The following list describes the system requirements for *e/Master* interconnect.

Client

- A computer running Windows NT 4.0 for Intel.
- At least 32 MB memory.
- At least 5 MB free disk space.

Server

- An Oracle server that has the *e/Master* project database installed. For system requirements for the server see the *e/Master* project manual.

Installation

It is easy to install *e/Master* interconnect. The installation program will check that the client requirements are fulfilled.

Warning! Before installing any new software close all open programs!

Installation sequence:

1. Insert the CD in your computer.
2. Open the CD-drive in the explorer program and double click on the setup.exe file.

CHAPTER 2

This chapter will give you a short introduction on how to use eI Master interconnect.

The purpose is to give you a quick start so you can begin using the program.

For detailed information look in the reference chapter.

The Drawing Tour

This tour will explain how to work with eI Master interconnect when your design is started from a circuit diagram.

Create Circuit Diagram

1. You must have a circuit diagram that describes your electrical design. Create the circuit diagram in eI Master design and save it to the database.

All apparatuses in the diagram as well as connections between terminals will be saved to the database.

The subnets created in the database from the connections in the drawing will be stored with a default sewing order.

Start interconnect

2. Start the *e/Master* interconnect program by selecting the *e/Master* interconnect program icon in the *e/Master* group from the start menu.
3. When starting *e/Master* interconnect you are prompted to login to the database. Enter your username and password, see Figure 2 and select the project you want to work on.



Figure 2. Database Login dialog

Note: Since the list of available projects is stored in the database you must enter your username and password before you select project.

Main form

The main form for the standalone version of *e/Master* interconnect contains a menu and a toolbar for easy access to the different parts of the program.



Figure 3. The Main form of *e/Master* interconnect

All items in the menus, except **Exit** and **About interconnect**, have a corresponding speed button in the toolbar. These are presented in Figure 4.

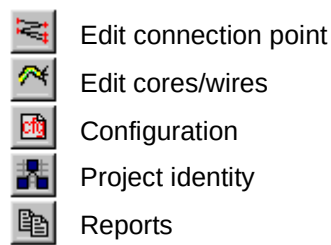


Figure 4. Toolbar buttons

Edit sew order

- 1. Open the *Edit Connection Point* dialog.

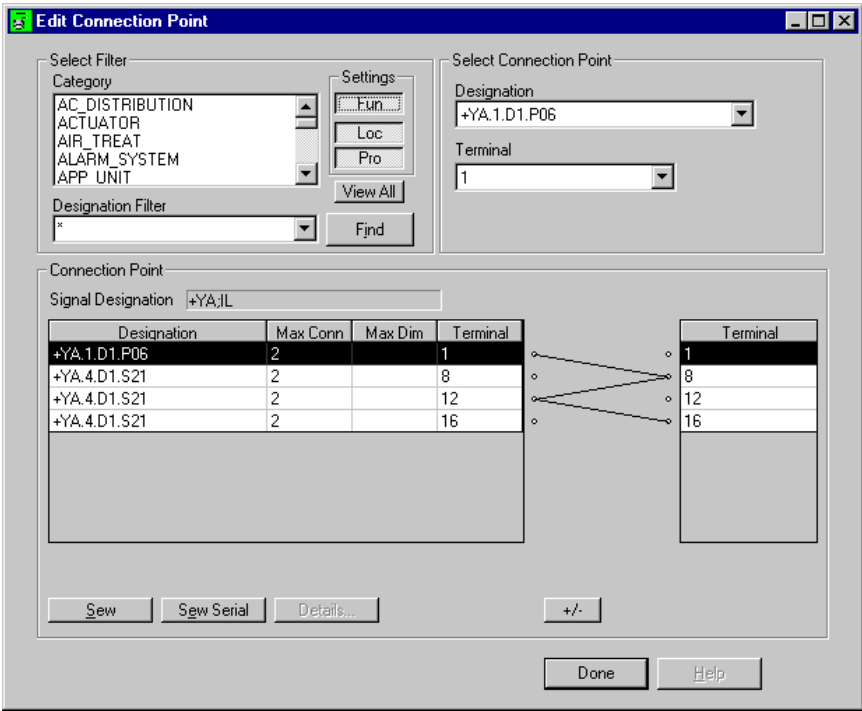


Figure 5. *Edit Connection Point* dialog

- 2. Right-click on the line to be removed.

3. Drag lines between the terminals or mark the terminals on both sides and press the button “+/-“.
4. Click the **Sew** button. The subnet will then be sewed according to the appearance in the dialog. To sew the subnet serially, click the **Sew Serial** button.

Assign wires with automatic numbering

1. Open the *Edit Cores/Wires* dialog.

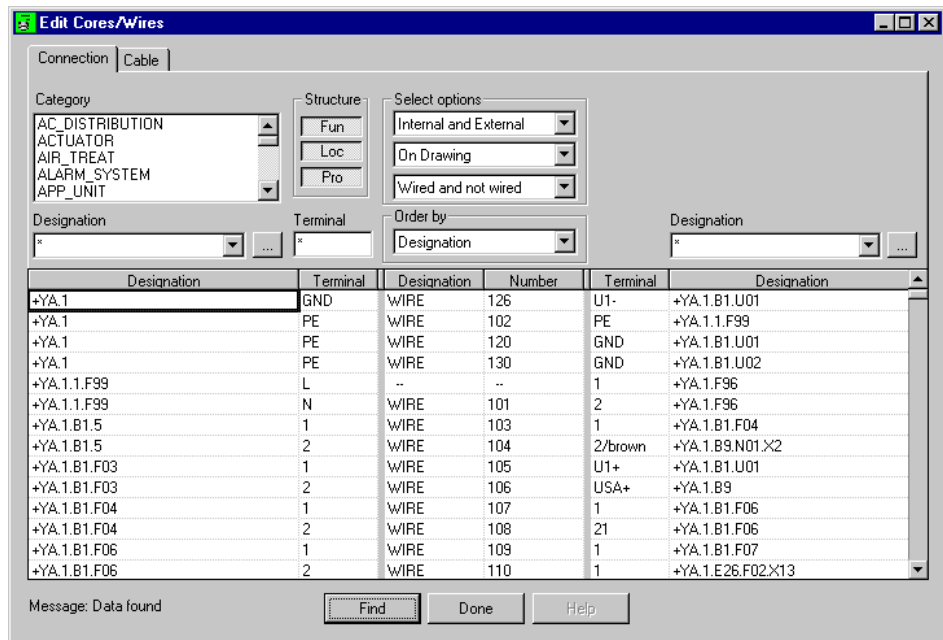


Figure 6. Edit Cores/Wires dialog

2. Select the empty connections you want to number and right-click on one of the connections you have selected.
3. Choose **Auto Number** from the menu. This will number the selected wires according to the current numbering rule.

Figure 8: Document Data dialog

3. Select a Report Category from the drop-down list.
4. Fill in a new document number, created signature and other data (See **Error! Reference source not found.** on page **Error! Bookmark not defined.**).
5. Press the **OK** button.

A dialog for filter options appears, see Figure 9.

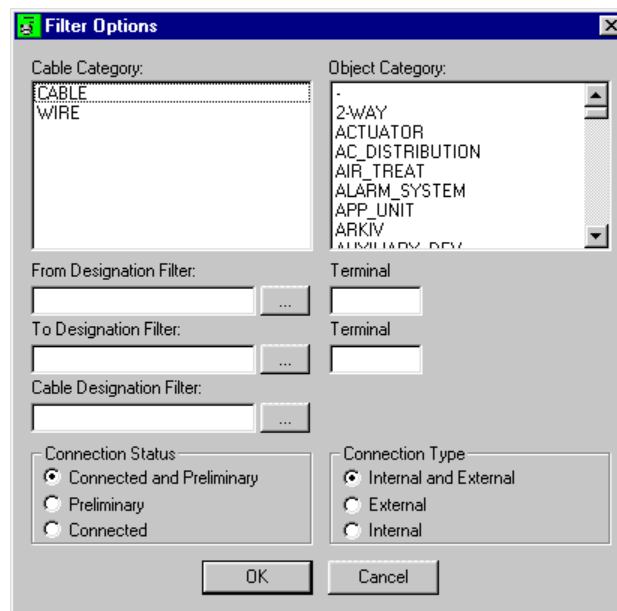


Figure 9. Filter Options dialog

6. Select **CABLE** in the *Cable Category* list if you are making a cable report and **WIRE** if you are making a connection report (See Filter Options on page 57).

Print report

1. Open the *Report* dialog.
2. Select the report and press the **Print** button.

CHAPTER 3

This chapter is a reference for the functionality in elMaster interconnect.

Database Login dialog

When starting *elMaster* interconnect you are prompted to login to the database. Enter your username and password, and select the project you want to work on.



Figure 10. Database Login dialog

The username and the project identity are saved between sessions.

Note: Since the list of available projects is stored in the database you must enter your username and password before you select project.

Main form

The main form for the standalone version of *e/Master* interconnect contains a menu and a toolbar for easy access to the different parts of the program.



Figure 11. Main form for the *e/Master* interconnect application.

There are four menus:

- File
- Edit
- Configuration
- Help

All items in these menus, except **Exit** and **About interconnect**, have a corresponding speed button in the toolbar. These are presented in Figure 12.

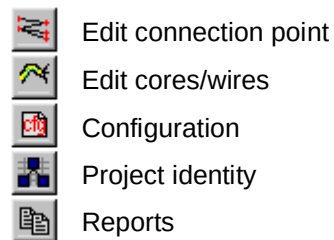


Figure 12. Toolbar buttons

File menu

The File menu contains two alternatives: Reports and Exit.

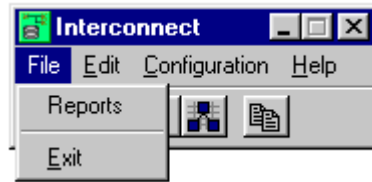


Figure 13. File menu.

Reports

Opens the *Report* dialog.

Exit

Quits *e/Master* interconnect.

Edit menu

The Edit menu contains two alternatives: Edit Connection Point and Edit Cores/Wires.

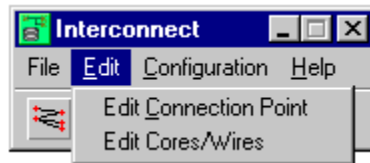


Figure 14. Edit menu.

Edit Connection Point

Opens the *Edit Connection Point* dialog

Edit Cores/Wires

Opens the *Edit Cores/Wires* dialog.

Configuration menu

The Configuration menu contains two alternatives: Configuration and Project identity.

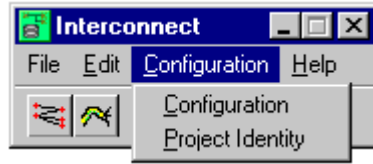


Figure 15. Configuration menu

Configuration

Opens the *Configuration* dialog.

Project Identity

Opens the *Select Project Identity* dialog.

Help menu

The Help menu contains one item; About interconnect.



Figure 16. Help menu.

About interconnect

Opens the *About elMaster interconnect* dialog.

Configuration dialog

The *Configuration* dialog is divided in different tabs related to different parts in the program.

The following sections describe each tab.

There are also some configuration variables in the database. These are listed in Appendix A.

General

In the general configuration page, see Figure 17, you select which structure should be displayed both on screen and in the reports. If the first structure is empty when displaying designations the second structure is displayed and so on.

In this page you can also select if warnings and errors should be logged to a file, and in that case to which file.

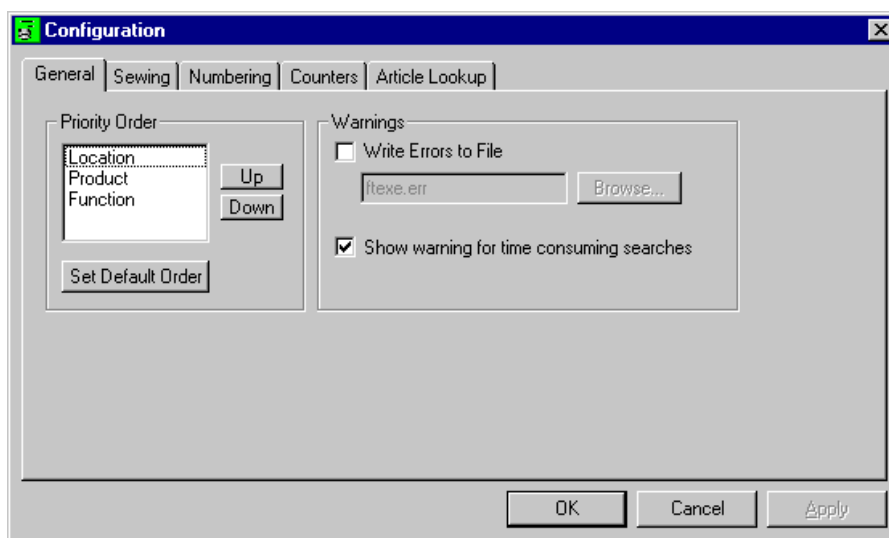


Figure 17. Configuration General dialog

Sewing

In the sewing configuration page you select whether the program should check for and report errors concerning **Max Connections/Terminal** and/or **Max Dim/Terminal**. There is also a possibility to set up how many spare cores should be left when assigning a cable both as a percentage of cores and as a fixed number of cores.

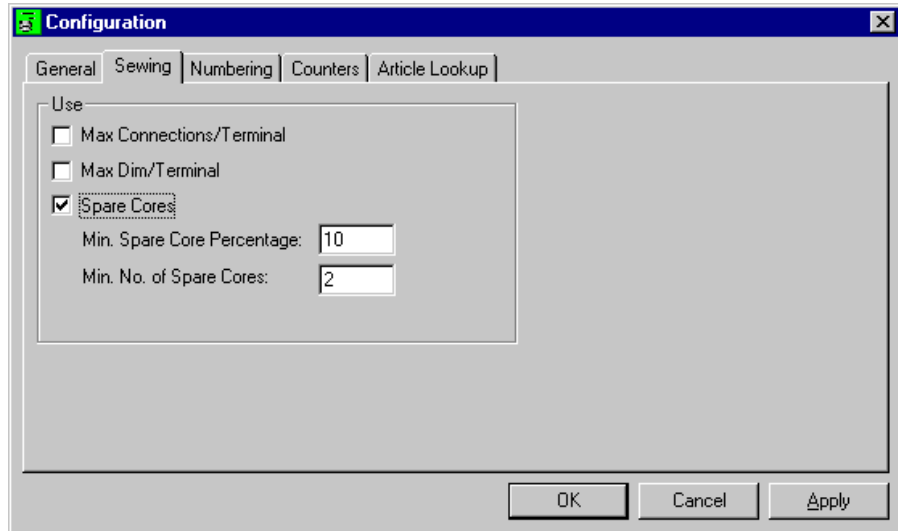


Figure 18. Configuration Sewing dialog

Numbering

In the numbering configuration page you set up numbering rules for auto numbering of wires.

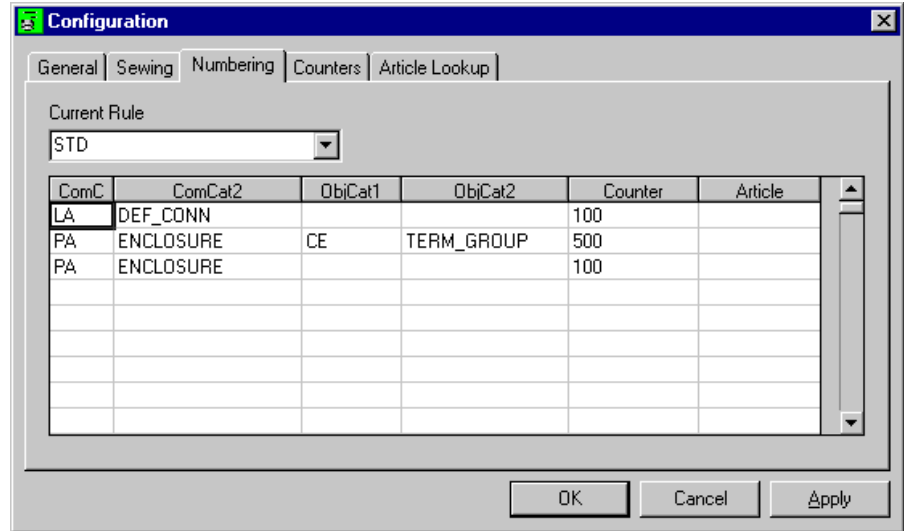


Figure 19. Configuration Numbering dialog

Current rule

In this field the, rule that is currently used in the project, is displayed. The grid displays the configuration for that rule. The rule can be reused in any project. Just select the old rule again for the new project.

Common category

Is the category for the object, which the two connections have in common.

Object category

Is the category that at least one apparatus has in the connection.

Counter

Is the counter that will be used for numbering the connection if the row matches the connected apparatuses.

Article

Is the article that will be used if the row matches the connected apparatuses.

How do the rules work?

This short example explains how the rules work.

Two apparatuses are connected in an enclosure. One of the apparatuses is a terminal block. The common category for the apparatuses is ENCLOSURE. One of the apparatus has the category `TERMINAL_BLOCK`. This matches the second row, which points out a counter name 500. The wires between these apparatus will be numbered according to the 500 numbering counter.

Two relays in the enclosure are also connected to each other. The common category for the relays is ENCLOSURE. The object category is RELAY. This matches the first row since it can have any object category. This row points out the counter name 100, which will be used for numbering the wire between the relays.

Default rule

There is a possibility to have a default rule. The common category must be `DEF_CONN` but the counter could be one of the already defined counters.

When no other rule match the connection, the default rule will be used. If there is no default rule defined, nothing will happen.

Fmt

If **TermNo** is not checked **Fmt** is an Oracle formatting string, see Appendix B, used to format the generated number. If **TermNo** is checked **Fmt** is the string separating the terminals in the generated number.

Suffix

Is the string that will be appended after the generated number.

TermNo

If **TermNo** is checked the counter will not use the generated number, but instead use the terminals separated by the **Fmt** string.

How does the counter work?

These short examples explain how the counters work.

The counter 100 in the figure above starts counting at 100 and has a length of 499 and a spare of 500. This means that the generated number will begin counting at 100, when it reaches 499 it will leave a spare of 500 numbers and begin counting again at 1000. When the counter reaches 1499 it will make a jump of 500 numbers. The counter will continue in the same way further on.

The counter TERM will depend upon the terminals. If the terminals are X1 and 2 the generated number will be KXX1/2.

Article Lookup

In the article lookup configuration page you select which fields to show in the article lookup and in which order they are displayed. You also select whether the grid should be automatically updated when the filters are changed, or if the user has to click **Find** to perform the search.

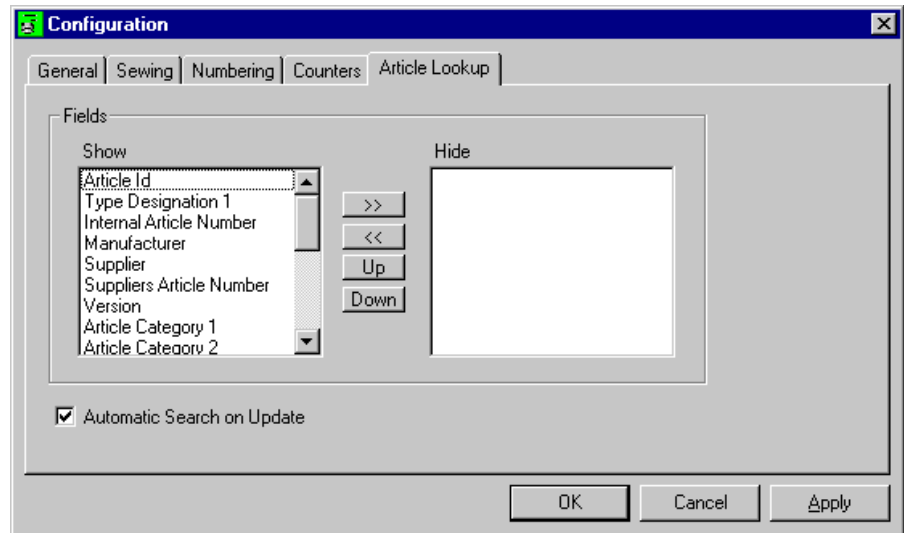


Figure 21 Configuration Article Lookup dialog

Edit Connection Point dialog

The *Edit Connection Point* dialog, see Figure 22, lets you change the sew order for a connection point. To edit a Connection Point you first select appropriate filters and click find, and then select one of the designations and terminals of the Connection Point you want to edit.

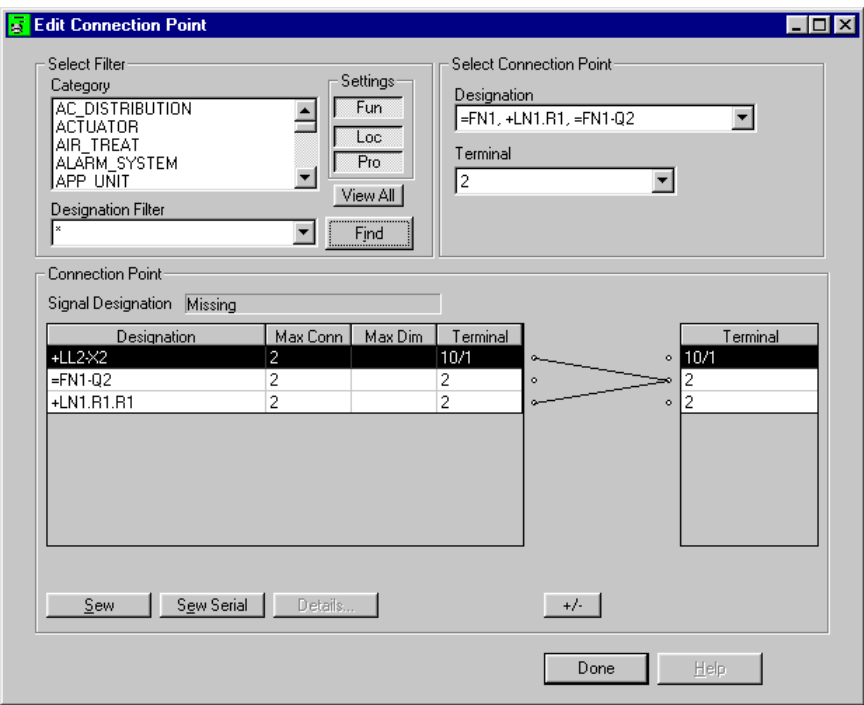


Figure 22. Edit Connection Point dialog

View All

If **View All** is selected all connection points are shown. If **View All** is not selected only connection points with more than two terminals, i.e. connection points that can be sewn in more than one way are shown.

Sew

To edit the sew order click on the line to remove and drag a new line from one terminal to another. Click the **Sew** button and the subnet will be sewed according to the appearance in the dialog.

Note: The new sew order is not saved until you click **Sew** or **Sew Serial**. If you exit the dialog without doing this your changes will be lost.

Sew Serial

To sew the subnet serially click the **Sew Serial** button.

+/-

Instead of using the mouse to draw lines between terminals you can also select the terminals on both sides and then click the +/- button to draw/remove a line between the two terminals.

Edit Cores/Wires dialog

The *Edit Cores/Wires* dialog has two different tabs. A Connection tab for working with connections and a Cable tab for working with cables/wires

Connection tab

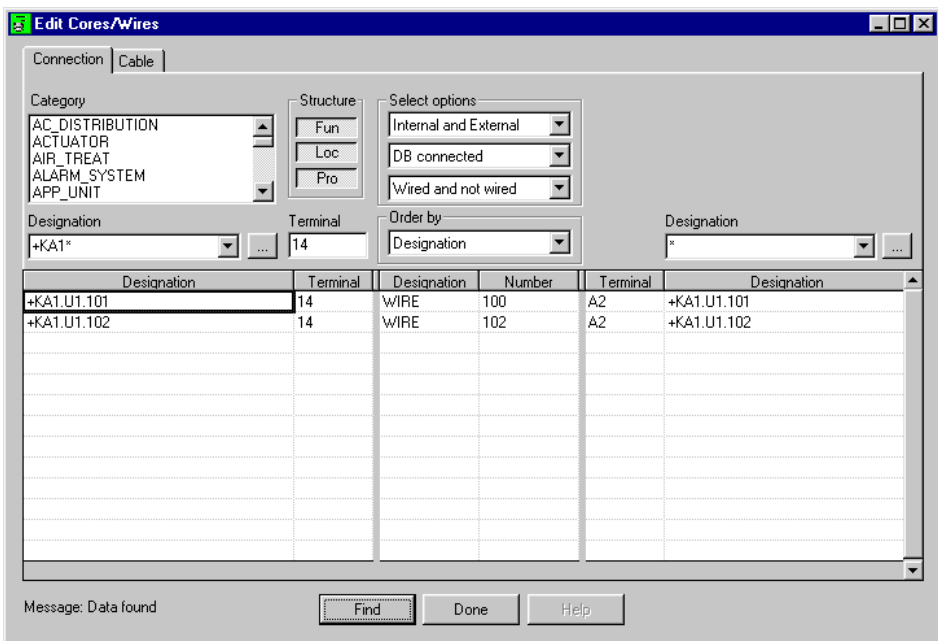


Figure 23. Edit Cores/Wires dialog

Filtering

There are several filters in the dialog that lets you select which connections to show.

Options filter

The options filter lets you select how the designation and terminal filters should be interpreted.

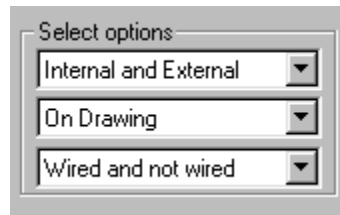


Figure 24. Options filter.

- The **Internal and External** filter lets you decide if you want too see Internal or External connections.
 If **Internal** is selected only connections with both sides matching the filter will be shown.
 If **External** is selected only connections with only one side matching the filter will be shown.
 If **Internal and External** is selected you have the option of specifying designation filters for both sides of the connection.
- The **On Drawing** filter lets you decide if you want too see connections that exist on a drawing or only in the database.
 A connection that is **Only in database**, is a connection that does not exist on any drawing.
- The **Wired and not wired** filter lets you decide if you want too see connections that has been assigned a Cable/Wire, or not.
 A **Wired** connection has been assigned a Cable/Wire object. A **Not wired** object has not been assigned a Cable/Wire object.

Category filter

The category filter lets you select which categories of objects to show. If no category is selected in the filter, all categories are shown.



Figure 25. Category filter

Tip! Right clicking in the category box brings up a menu with the choice of deselecting all selections.

Designation filter

The designation filter lets you select which designations to show. If you want to show all designations starting with +S.1 you enter the value +S.1* in the designation filter.

The filter supports the Windows standard wildcards * and %.



Figure 26. Designation filter.

Clicking the button ..., next to the filter, brings up the *Designation Lookup* dialog, which let you select designation from all available designations.

Terminal filter

The terminal filter lets you filter on terminals. To view all terminals ending with /2 you enter the filter */2.

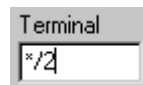


Figure 27. Terminal filter.

Structure filter

Selecting structures lets you select which structures should be searched. If only the function structure is selected, you will only see connections that match the designation and terminal filters in the function structure.



Figure 28. Structure filter.

Note: If both the designation and the terminal filter are set to *, all connections will be shown regardless of the structures selected.

Sorting

Sorting can be done either by designation or by subnet.

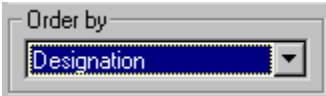


Figure 29.

If **Subnet** is selected red grid lines separate the subnets.

Note: If the connections are ordered by subnet all terminals in a subnet with at least one connection satisfying the designation and terminal filters will be shown.

Object Information

To show more information about an object than is possible to view in the grid you select the object and choose **Object Information** from the right button menu.

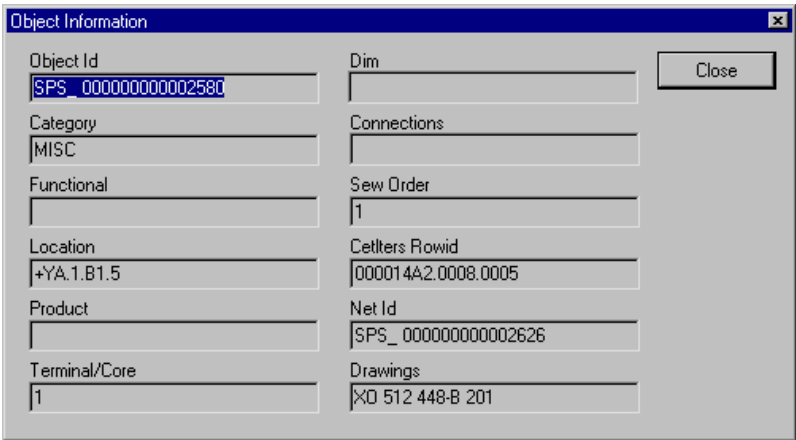


Figure 30. Object Information for terminals

If you have selected a Cable/Wire object the *Cable Designation* dialog (see page 46) will be displayed with all fields grayed out.

Edit Cable/Wire

To assign cables, select empty connections, right-click one of the connections you have selected, and choose **Edit Cable/Wire** from the menu. A dialog appears where assign the cable number. In that dialog you can also assign an article to the cable. If an article is assigned the program will use the cable article core numbers to number the selected connections.

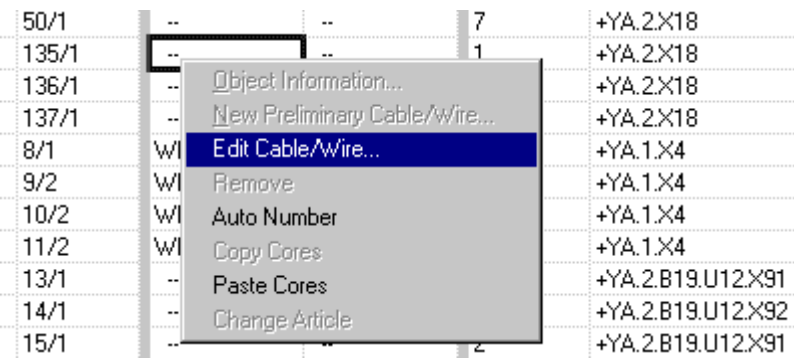


Figure 31. Edit Cable/Wire

Remove

If you want to remove an assigned Cable/Wire object from one or more connections you can select all connections and choose **Remove** from the right button menu.

Auto Numbering

To assign wires with automatic numbering, select the empty connections you want to number, right-click one of the connections you have selected, and choose **Auto Number** from the menu. This will number the selected wires according to the current numbering rule.

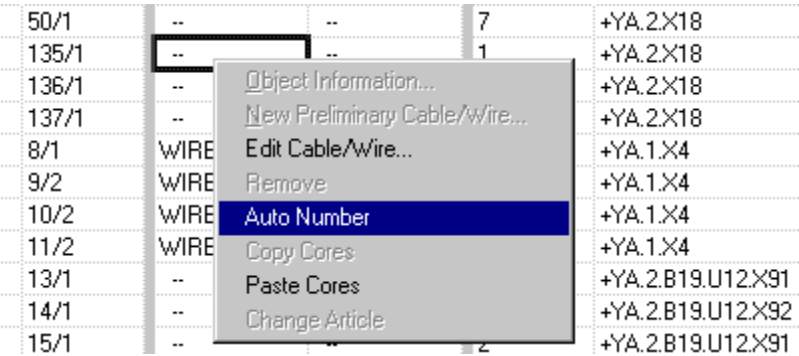


Figure 32. Auto Number

Paste Cores

There is a possibility to copy cores from the Cable tab to the Connection tab. See “Copy/Paste Cores”, page 42 for details.

Change Article

To change the article of a Cable/Wire object, select the object and choose **Change Article** from the right button menu. This will bring up the *Article Lookup* dialog (see page 44) to let you select a new article.

Cable tab

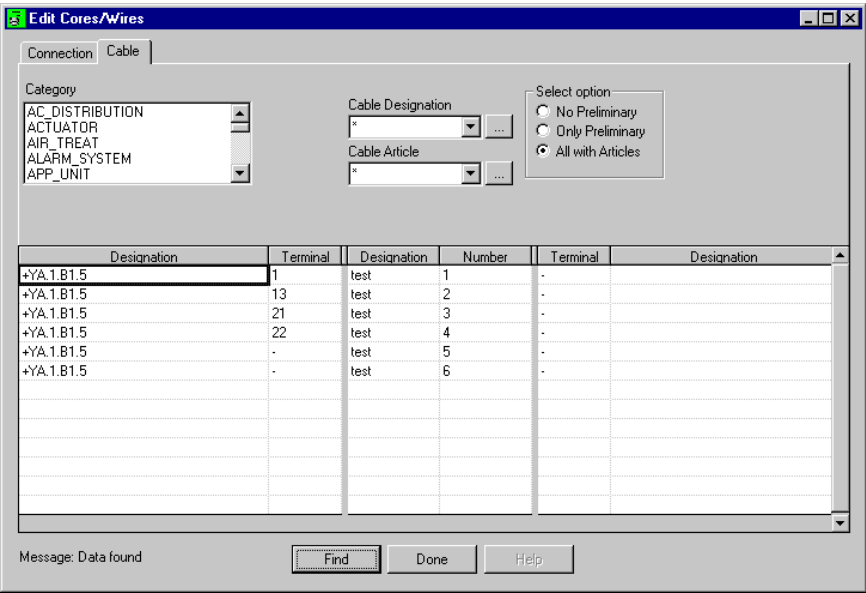


Figure 33. Edit Cores/Wires

Filtering

There are several filters in the dialog that lets you select which connections to show.

Preliminary/No Preliminary filter

The *Preliminary/No Preliminary* filter lets you select which cables/wires to show.

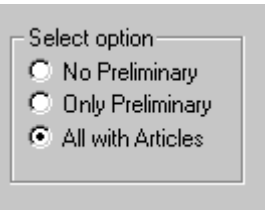


Figure 34. Preliminary/No Preliminary filter

If **Only Preliminary** is selected only preliminary cables/wires, i.e. cables/wires without a relation to a terminal, are shown.

If **No Preliminary** is selected no preliminary cables/wires are shown.

If **All with Articles** is selected all cables/wires with a relation to an article are shown.

Category filter

The *category* filter lets you select which categories of objects to show. If no category is selected in the filter, all categories are shown.



Figure 35. Category filter.

Tip! Right clicking in the category selection box brings up a menu with the choice of deselecting all selections.

Cable Designation filter

The *Cable Designation* filter lets you filter out cables/wires with a certain number.



Figure 36. Cable Designation filter

Clicking the button "...", next to the filter, brings up the *Designation Lookup* dialog, which let you select cable number from all available cables/wires.

Cable Article filter

The *Cable Article* filter lets you filter out cables/wires of a certain type.

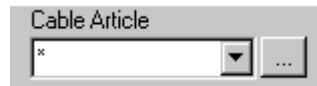


Figure 37. Cable Article filter

Clicking the button “...”, next to the filter, brings up the *Article Lookup* dialog, which let you select cable type from all available articles.

Create Preliminary Cables/Wires

To create a Preliminary Cable/Wire place the grid cursor in one of the Cable/Wire columns (Designation or Number), right-click, and choose **New Preliminary Cable/Wire** from the menu. This will bring up the *Cable designation* dialog (see page 46) to let you enter information about your preliminary connection.

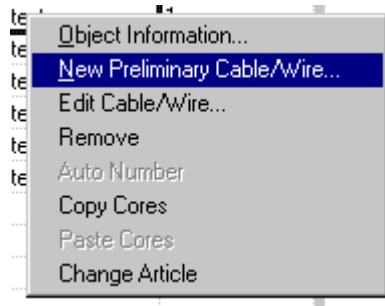


Figure 38. New Preliminary Cable/Wire

Remove

If you want to remove one or more Cable/Wire object select them and choose **Remove** from the right button menu.

Copy/Paste Cores

There is a possibility to copy cores from the Cable tab to the Connection tab.

Select the cores you want to copy from the Cable tab. Select **Copy Cores** from the right button menu.

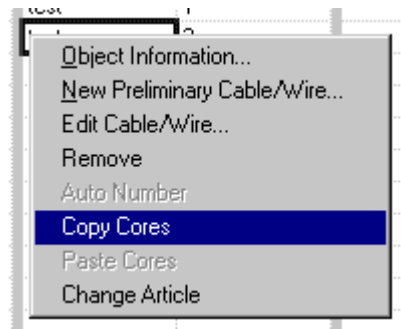


Figure 39. Copy Cores

Switch to the Connection tab and select the connections you want to assign the cores to. Chose **Paste Cores** from the right button menu.

Article Lookup dialog

The *Article Lookup* dialog lets you select articles for your objects.

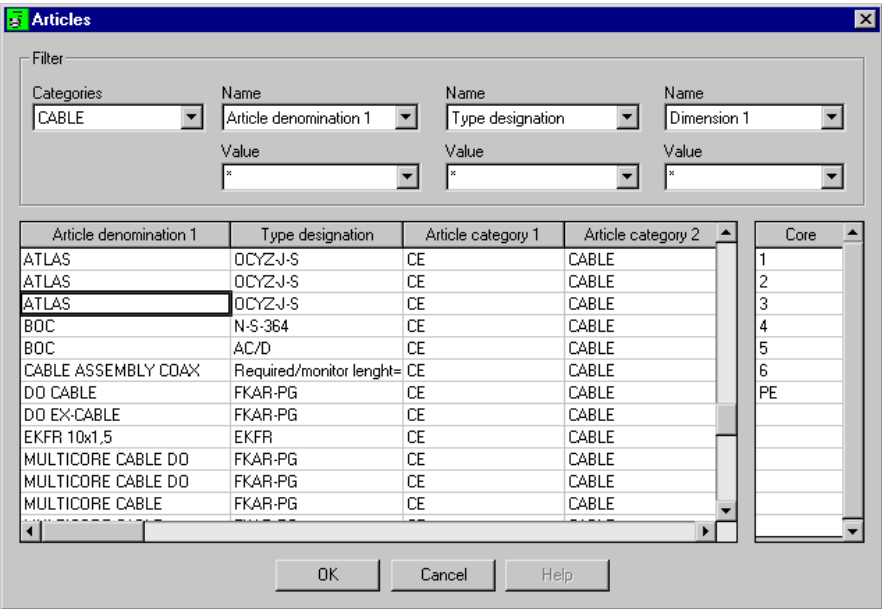


Figure 40. Article Lookup dialog.

Which columns are shown, and in which order is set up in the *Article lookup configuration* page in the *configuration* dialog. To temporarily show all fields you can right click anywhere in the grid and select **Show all Fields** from the menu.



Figure 41. Show all Fields.

When selecting a cable article the order in which the cores are used is determined by the sequence in which you select them. Not selecting any cores means they will be used in the default order, i.e. the order in which

they are displayed in the grid. This order is set in *e/*Master project administrator.

Using filters

There are several filter options to let you select which articles to show.

Category filter

The *category* filter lets you select which category of articles you want to use.

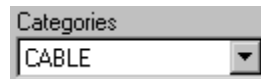


Figure 42. Category filter.

Optional filter

Apart from the category filter you can add up to three more filters to narrow down your search. To use these filters simply select the field the filter should work on in the upper combo box, and select the value of the filter in the lower combo box.

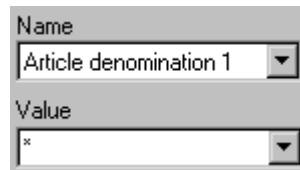


Figure 43. Optional filter.

A fast way to add a filter is to use the **Add to Filter** function. By selecting a cell in the grid, right click it, and choose **Add to Filter** the value in this cell is used as a filter.



Figure 44. Add to Filter

Tip! Entering the value ** instead of the default * in a filter will suppress the showing of all articles with a NULL value in the specified field.

Cable Designation dialog

The *Cable Designation* dialog is used both for viewing and editing of Cable/Wire data. When the dialog is used for viewing, i.e. opened by the menu selection **Object Information** all fields in the dialog are read-only.

Figure 45. Cable Designation dialog

Get Article

Clicking the **Get Article** button will open the *Article Lookup* dialog to let you select an article for your Cable/Wire. This data will be displayed in the *Article Data* fields upon closing the *Article Lookup* dialog.

If an article is already assigned to the object the **Get Article** button will be grayed out. To change the article you choose **Change Article** from the right button menu in the grid.

Get Cable

Clicking the **Get Cable** button will open the *Designation Lookup* dialog to let you select cores for your selected connections from an existing cable.

Show more data

Clicking the **Show more data** button will expand the dialog to make room for more fields. Here you have the possibility to enter data about both the Cable/Wire and the connection.

The screenshot shows the 'Cable Designation' dialog box with the 'Show more data' button clicked, revealing additional input fields. The dialog is organized into several sections:

- Common cable designations:** Includes text boxes for 'Functional:', 'Location:' (containing 'L1'), and 'Product:'.
- Cable Designation:** Similar to the common section, with 'Functional:', 'Location:', and 'Product:' fields.
- Transition:** Two sets of dropdown menus, one for each of the 'Common cable designations' and 'Cable Designation' sections.
- Article Data:** A group box containing 'Database Id:' (SPS_000000000003279), 'Denomination:' (FKAR.6), 'Code:' (FKAR), and 'Dim:' (6x0,5).
- Connection Type:** Radio buttons for 'Cable' (selected), 'Wire', and 'Link'. A small icon of a cable bundle is shown next to the buttons.
- Free Cable Number:** A text box containing '1001'.
- Show less data:** A button to collapse the expanded fields.
- Cable Data:** Fields for 'Cable Class:', 'Cable Code:', 'Cable Length:', 'Instruction:', 'Routing:', and 'Remark:'.
- Connection Data:** A 'Remark:' text box.
- Buttons:** 'Test', 'OK', 'Cancel', 'Get Cable', and 'Get Article' at the bottom.

Figure 46. Cable Designation dialog (more data)

Designation Lookup dialog

The *Designation Lookup* dialog lets you select designations and cores/terminals from objects in your project. The cores/terminals already used are grayed out.

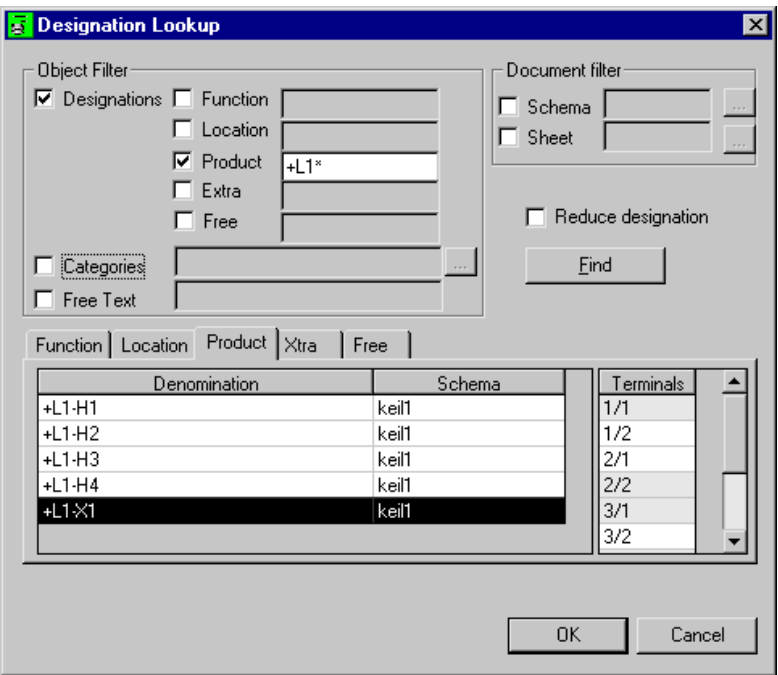


Figure 47. Designation Lookup dialog

There are several filters that let you select which designations to display. These filters can be combined to narrow down your search.

Designation filter

The *designation* filters let you filter on designations in the different structures. Check the checkbox next to the filter to make it active.

Category filter

The *Category* filter lets you select that only objects of a certain category, i.e. cables, should be shown. Check the checkbox next to the filter to make it active.

If you click the button "...", next to the *Category* filter, the *Get Category* dialog (shown below) is opened to let you select a category.

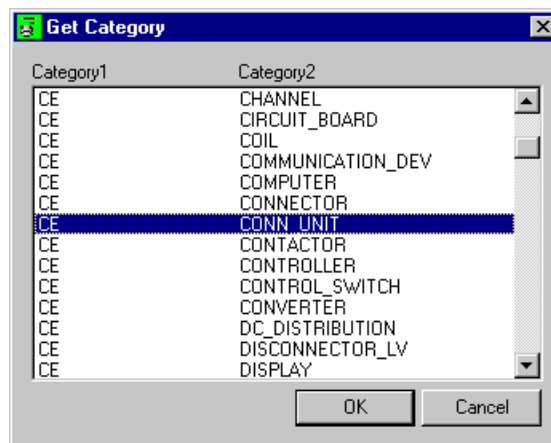


Figure 48. Get Category dialog

Document filters

The document filters let you select that only objects in a certain schema, or even in a certain sheet of a schema, should be shown. Check the checkbox next to the filter to make it active.

If you click the button "...", next to the *Schema* filter, the *Select schema* dialog (shown below) is opened to let you select a schema.

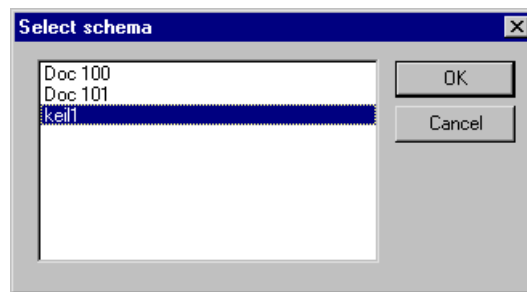


Figure 49. Select schema dialog

If you click the button "...", next to the *Sheet* filter, the *Select sheet on schema* dialog (shown below) is opened to let you select a sheet from the selected schema. If no schema is selected the dialog will let you select a sheet from all sheets in the project.

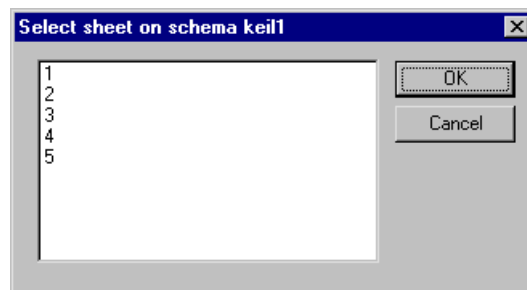


Figure 50. Select sheet on schema dialog

Select Project Identity dialog

To change current project, select a new project in the combo box and press the **OK** button.

If you have any other dialogs open you must search again in these dialogs to update the dialogs with data for the new project.

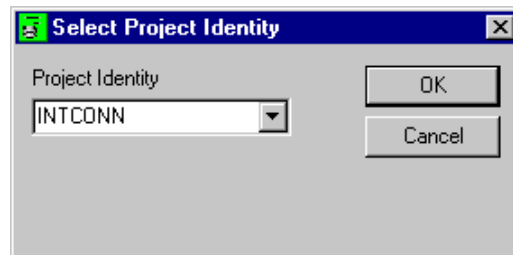


Figure 51. Select project identity dialog

About e/Master interconnect dialog

In the **About e/Master interconnect** dialog you see what version of e/Master interconnect you are currently running.



Figure 52. About e/Master interconnect dialog

Reports

In e/Master interconnect it is possible to create several different reports. By combining our pre made reports with your own filters you have the possibility to create a variety of report documents, such as external cable lists, internal wire lists per cubicle and so on.

Report dialog

To create a new report, press the **New** button. A dialog with document data will appear, in which you can select which report type you want to create.

When you press **OK**, a dialog with filter data appears. These dialogs are described under their own headings.

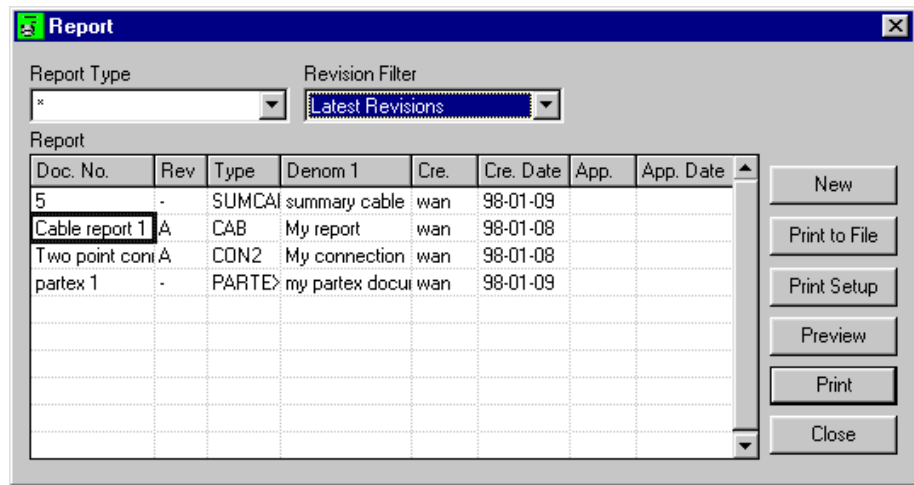


Figure 53. Report dialog

To create a new revision, place the pointer over an existing report and then select **New Revision** from the right mouse button menu. A new revision is created with document and filter data from the old revision. The *revision* field is also increased according to the revision numbering variables.

A new revision can only be created on an approved document. To approve a document, right-click on the document that you want to approve and select **Approve Document**.

If you want too see the revision history of a document, right-click on the document in the report grid and select **Revision History**.

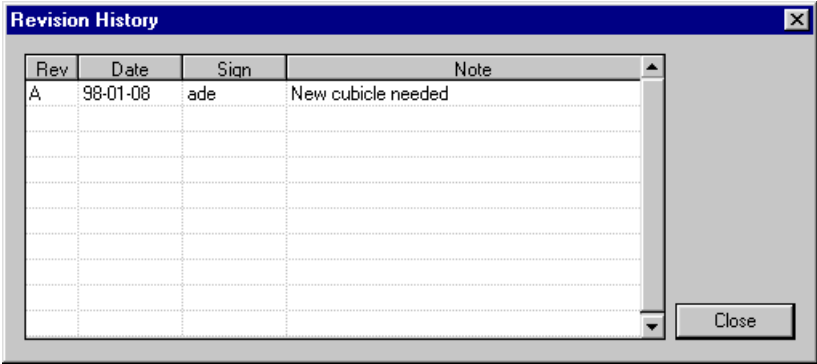


Figure 54. Revision History dialog

Document Data

The *Document Data* dialog contains document data for the report. The document data is divided in two tabs, **Main Data** and **Additional Data**.

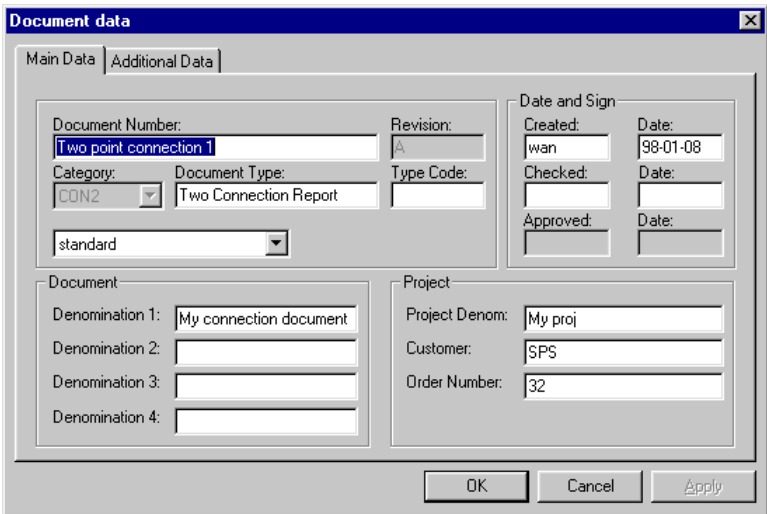


Figure 55. Document Data dialog - Main Data

Main Data tab

Document Information

The *Document Number* field is mandatory. There can not be more than one document in each project with the same document number. The *Revision* field displays the current revision for the report. Using the *Category* drop-down list, you can select the document type that you want to create. Once created, it can not be changed. It is possible to have different variants for each category. All available variants for a category are displayed in a drop-down list.

Date and Sign

The *Date and Sign* fields display data about the creation and approval of the report. The created date and signature are mandatory fields.

Document

In the document group there are fields to use for document specific data.

Project

In the project group there are fields to display data concerning the current project. When you create a new document, data will automatically be retrieved from the project data in *e/Master* project. If the project data is changed in *e/Master* project, it will automatically be changed for every document.

Additional Data

The screenshot shows a Windows-style dialog box titled "Document data" with a close button (X) in the top right corner. Inside the dialog, there are two tabs: "Main Data" and "Additional Data". The "Additional Data" tab is currently selected. The dialog is divided into two main sections. The left section contains five vertically stacked text input fields, each preceded by a label: "Standard:", "Based on:", "Language:", "Replaces:", and "Replaced by:". The right section contains two larger text input areas, each preceded by a label: "Remark1:" and "Remark2:". At the bottom right of the dialog, there are three buttons: "OK", "Cancel", and "Apply".

Figure 56. Document Data dialog - Additional Data tab

The *Additional Data* tab contains additional information about the document.

Filter Options

The *filter Options* dialog lets you select which connections should be in the report.

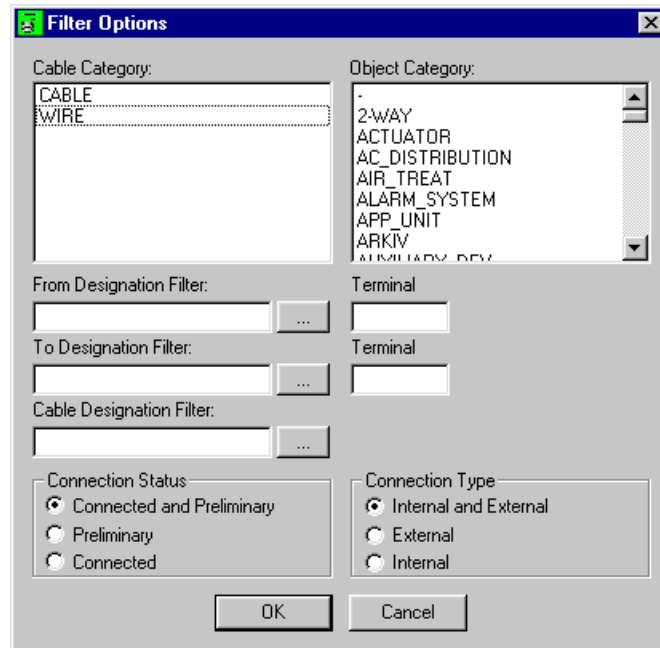


Figure 57. Filter Options dialog

Cable Category filter

The *Cable Category* filter lets you specify whether you want only cables, only wires, or both in the report.

Object Category filter

The *Object Category* filter lets you select different objects that your connections should be connected to. This means that only connections, which has at least one side connected to one of the selected object categories, will be displayed in the report. If you have specified several object categories, any connections to either of these categories will be displayed in the report.

Designation filter

The designation filters lets you filter on the designation of from and to side, and the designation of the Cable/Wire. Clicking the button “...” next to the filters brings up the *Designation lookup* dialog. For example, by inserting +KA.1* in one of the designation filter, all connections that are connected to +KA.1 and any units under that one will be displayed in the report. If you specify a filter for both from and to side, only connections going between those units will be displayed.

Terminal filter

The *Terminal* filter lets you filter on from and to side terminals. Here you can specify if you only want to see one side of the terminals or only one/several specific terminals. For example, by inserting */2 in the terminal field you will only display those terminals that are connected to that side of the terminal.

Connection Status filter

The *Connection Status* filter lets you select which connections that should be in the report, connected, preliminary, or both.

Connection Type filter

The *Connection Type* filter lets you select which type of connections should be in the report: internal, external, or both. If *Internal* is selected, only connections inside the given unit in the *Designation filter* will be displayed. If *External* is selected, only connections going from the unit given in the *Designation filter* will be displayed.

Format Options

The *Format Options* dialog lets you select how the connections should be presented in the reports.

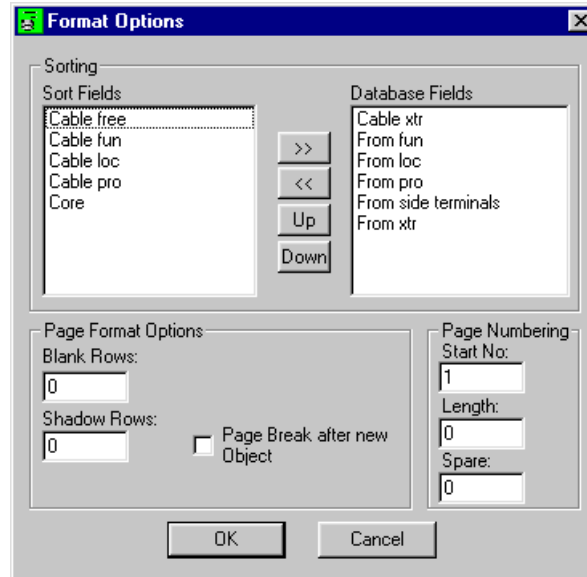


Figure 58. *Format Options* dialog

Sorting

To select how the connections should be sorted in the report you use the sorting fields.

On the left-hand side you have the *Sort fields* which determines the order in which connections are sorted. In the example above (Figure 58. *Format Options* dialog) the connections are primarily sorted on the free cable number and then on the other cable number fields and then on the core number. On the right-hand side you see the *Database fields* which are not currently used when sorting connections.

You can move fields between *Sort fields* and *Database fields* using the >> and << buttons. You can change the order of the *Sort fields* using the **Up** and **Down** buttons.

Tip! To clear all selections on the left-hand side make sure there are no selections on the right-hand side and click the << button. To clear all connections on the right-hand side make sure there are no selections on the left-hand side and click the >> button.

Page Format Options

Blank rows

The *Blank Rows* field lets you select if blank rows should be inserted between the connections in the report.

Entering the value 1 inserts a blank row between all connections. Entering the value 2 inserts a blank row after every two connections and so on.

Shadow rows

The *Shadow Rows* field lets you select if certain rows should be shadowed.

Entering the value 1 makes every row shadowed. Entering the value 2 makes every other row shadowed and so on.

Page break after new object

The *Page Break After New Object* check box lets you select whether every new object should start on a new page. A new object in a cable table is a new from designation and a new object in a connection report is a new cable number.

Page Numbering

The *Page Numbering* fields let you select how you want your pages numbered. The *Start No* field determines what page number should be used for the first page. The *Length* field determines how many pages should be numbered consecutively, and the *Spare* field determines how many page numbers should be omitted before numbering starts again.

Example

If you set *Start No* to 1, *Length* to 5, and *Spare* to 5 the page numbering will start on page 1 count up to page 5, then start at 11 and count up to 15 and so on.

Printing

To set-up the printer click on the **Print Setup** button and select between available printer options.

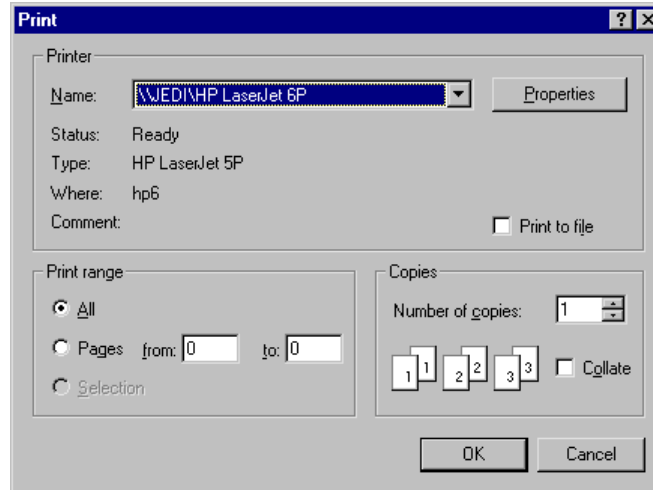


Figure 59. Print set-up dialog.

To print a report click on the **Print** button. The **Print to File** button is used to create a PARTEX text file. This button will only work with documents that are of the partex category.

To preview a report click the **Preview** button and the print preview dialog appears.

The screenshot shows a window titled "Connection report". At the top, there are navigation buttons (back, forward, search, etc.) and a status bar indicating "2 of 2+" and "Total: 536". The main content is a table with the following columns: Table Name, Date, Time, and several data columns. The table contains multiple rows of data, including dates and times. At the bottom of the window, there is a section for "CORRECTION TABLE" and "REPORT" with checkboxes and labels.

Figure 60. Print preview window for the report.

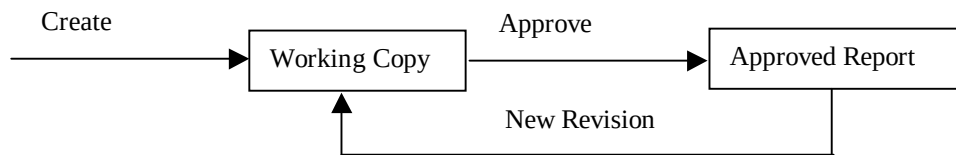
The preview dialog contains several buttons. Buttons to navigate between pages, **Print/Export** button and a **Zoom** button.

To print the report from the preview dialog click the **Print** button. If you want to export the report to another format, push the **Export** button and select the export format that you want to export to.

Revision handling for reports

By using revision handling in *e/Master* interconnect you have the possibility to keep track of changes and revisions. Each revision will be saved so that you can go back and see what you have changed and why.

When working with revisions in it is important to know how the revision handling works. If the document has been approved, it can not be changed in any way. All filters and formats will be retained and the same set of data will be printed every time. Below you can see a figure showing the workflow of the revision handling.



First you create your document. The status of the document is now a working copy. This means that you can edit the document in any way you like. When you consider that the document is finished you can approve the document. If you should detect any errors or for some reason want to edit the document you will have to create a new revision of the document. This new revision then becomes the working copy.

There are three functions that are important when you are working with revisions:

- Approve Document
- New Revision
- Revision History

Approve Document is a function that will approve your document. This means that the document has been frozen and no changes can be done to this document. **New Revision** is a function that will create a new copy of an approved document. This new document, a so-called working copy, can be edited and later on approved. The **Revision History** function will bring up a dialog that contains all created revisions of the selected document. The

dialog will contain revision information, such as dates, signatures and descriptions of the changes.

PARTEX markings

In this product we have included support for automatic cable and wire mark generation according to the PARTEX R-format. You can create your R-format text-file just as you would create any other report. This file can then be send to PARTEX Marking Systems AB to create your customized cable and wire marks.

How too create your R-format text-file

This section will briefly explain the necessary steps to create your text-file.

Create a partex document

First you have to create a partex document. Just push the **New** button in the report dialog. Then you select the partex category for this report. After you have filled out all necessary document data, you click on **OK**.

Select filter options

Now you can open the filter options dialog for your partex document. In this dialog you can filter which cables and wires that you want generate marks for. You can also filter on internal and external connections.

Select format options

When you select format options for a partex report, you will be able to configure specific partex information for your text-file. Here you select the appearance of the cable and wire marks. You also specify how the markings should be packed.

Create the text-file

To create the text-file you simply push the **Print to File** button and select a name for your file. This file should then be send to PARTEX Marking Systems AB either via modem or by mail.

Partex Configuration dialog

It is in the *Partex Configuration* dialog that you configure the appearance of the cable and wire marks. Each part of the dialog is described below:

Partex Configuration

Cable / Wire Marking

Cable / Wire 1	Delimiter	Cable / Wire 2	Delimiter	Wire 3
Number	%	Item Des		

Cablepart Marking

Cablepart 1	Delimiter	Cablepart 2	Delimiter	Cablepart 3
Pin No.	#	Item Des	#	Cablepart

Cable Color: ■ Part Color: ■ Packing: ENCLOSURE

Order Information

Customer No.	12554-1	Cable Adjust.	L
Phone No.	013-234200	Part Adjust.	R
Company	SPS	No. of Sets	1
City	Linköping		

OK Cancel

Figure 61. Partex Configuration dialog

Cable/Wire marking

The Cable/Wire mark consists of several fields, each on separated with a delimiter. The third field of the Cable/Wire mark, is only available for

internal markings. There is one configuration for the Cable/Wire and one for the parts of the cable.

There are three different fields that can be selected in the *Cable/Wire Marking* section.

- Number - The cable number
- Item Des. - The item designation
- Pin No. - The pin number

Cablepart Marking

There are five different fields that can be selected for the *Cablepart Marking* section:

- Number - The cable number
- Cablepart - The combined part and cable number, e.g. 1000.1
- Part - The number of the part, e.g. 1
- Itemdes - The item designation
- Pin No. - The pin number

Cable color and part color

With simple up and down arrows it is possible to change the colour of the marks.

Back to back markings

When this option is selected, marks will have the opposite side from where they are placed. This option is only available for external markings when you pack one cable side in each bag.

Packing

This drop-down list selects the packing of the marks. It also defines the sorting of the R-format file. If you, for example select ENCLOSURE, all wires and cables in the same enclosure will be packed in one bag and so on.

Order information

This section contains your specific order information.

Example file

This is an example file of a partex generation:

```
!ORD!1254!69!1
!ADR!Sigma Power Software!Linköping!Wan!234200
!PAC!2
!PAC!Packed one cable side in each bag
!TYP!!2&6!!L&R
!REM!External
!TYP!FKAR-PG2x0.5
!SOR!1000A
!CAB!1000#KA
1000.1#:+KA.2.S1#:S12
1000.2#:+KA.2.S1#:S12
!SOR!1000B
!CAB!1000#SA
1000.1#:+SA.1.S2#:S21
1000.2#:+SA.1.AZ#:A1
!TYP!EKKJ4X6+6
!SOR!1001A
!CAB!1001#KA
1001.1#:+KA.2.S4#:S42
1001.2#:+KA.2.S4#:S42
!SOR!1001B
!CAB!1001#SA
1001.1#:+SA.1.S3#:S31
1001.2#:+SA.1.AZ#:A2
!END!12!25
```


APPENDIX A

Variables in e/Master interconnect

Below follows a description of all the variables in the database that are specific for e/Master interconnect.

Name	Default value	Description
FT_STATUS	FALSE	Determined if connections should be saved to the database.
FT_STD	STD	The rule used for automatic numbering of wires
FT_PRIORD	BAC	Priority order of structures.
FT_CON_CHECK	FALSE	If set to true the program checks max number of connections.
FT_AREA_CHECK	FALSE	If set to true the program checks max area for the terminal.
FT_SPARE_CORES	10	The value determinds the number of spare cores in procent.
FT_MIN_SPARE_CORES	1	The minimum number of spare cores.
FT_SPARE_CHECK	FALSE	Flag to check spare cores when assigning a cable article to a connection.

-
-
-

APPENDIX B

Number Format Models

All number format models cause the number to be rounded to the specified number of significant digits. If a value has more significant digits to the left of the decimal place than are specified in the format, pound signs (#) replace the value. If a positive value is extremely large and cannot be represented in the specified format, then the infinity sign (~) replaces the value. Likewise, if a negative value is extremely small and cannot be represented by the specified format, then the negative infinity sign replaces the value (~-).

Number Format Elements

A number format model is composed of one or more number format elements. Table 1 lists the elements of a number format model.

If a number format model does not contain the MI, S, or PR format elements, negative return values automatically contain a leading negative sign and positive values automatically contain a leading space.

A number format model can contain only a single decimal character (D) or period (.), but it can contain multiple group separators (G) or commas (,). A number format model must not begin with a comma (,). A group separator or comma cannot appear to the right of a decimal character or period in a number format model.

Element	Example	Description
9	9999	Return value with the specified number of digits with a leading space if positive. Return value with the specified number of digits with a leading minus if negative. Leading zeros are blank, except for a zero value, which returns a zero for the integer part of the fixed-point number.
0	099999990	Return leading zeros. Return trailing zeros.
\$	\$9999	Return value with a leading dollar sign.
B	B9999	Return blanks for the integer part of a fixed-point number when the integer part is zero (regardless of "0"s in the format model).
MI	9999MI	Return negative value with a trailing minus sign "-". Returns positive value with a trailing blank.
S	S99999999S	Return negative value with a leading minus sign "-". Return positive value with a leading plus sign "+". Return negative value with a trailing minus sign "-". Return positive value with a trailing plus sign "+".
PR	9999PR	Return negative value in <angle brackets>. Return positive value with a leading and trailing blank.
D	99D99	Return a decimal point (that is, a period ".") in the specified position.
G	9G999	Return a group separator in the position specified.
C	C999	Return the ISO currency symbol in the specified position.
L	L999	Return the local currency symbol in the specified position.
' (comma)	9,999	Return a comma in the specified position.
. (period)	99.99	Return a decimal point (that is, a period ".") in the specified position.
V	999V99	Return a value multiplied by 10 ⁿ (and if necessary, round it up), where n is the number of "9"s after the "V".
EEEE	9.9EEEE	Return a value using in scientific notation.
RNrn	RN	Return a value as Roman numerals in uppercase. Return a value as Roman numerals in lowercase. Value can be an integer between 1 and 3999.
FM	FM90.9	Returns a value with no leading or trailing blanks.

The MI and PR format elements can only appear in the last position of a number format model. The S format element can only appear in the first of last position of a number format model.

A

About e/Master interconnect, 52
 Article
 get, 46
 Article Lookup dialog, 44
 Assign
 cables, 17, 38
 wires with automatic numbering, 16

B

Back to back markings, 66

C

Cables
 assign, 17, 38
 cablepart marking, 66
 color and part color, 66
 designation dialog, 46
 get, 47
 mark, 65
 remove, 38
 Change
 article, 39
 Configuration dialog, 25
 article lookup, 31
 counters, 29
 general, 25
 numbering, 27
 sewing, 26
 Configuration menu, 24

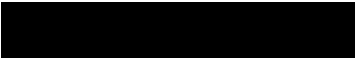
Connection report
 create, 17
 Connections
 sorting, 59
 Conventions in the manual, 11
 Copy/Paste
 cores, 42
 Create
 connection report, 17
 partex document, 64
 preliminary cables/wires, 42
 R-format text-file, 64
 text-file, 65

D

Database Login dialog, 21
 Designation filter, 58
 Designation Lookup dialog, 48
 Document Data, 54
 Drawing Tour, 13

E

Edit
 cable/wire, 38
 sew order, 15, 33
 Edit Connection Point dialog, 32
 Edit Cores/Wires dialog, 34
 cable, 40
 connection, 34
 Edit menu, 23
 Export
 report, 62



F

- File menu, 23
- Filter
 - designation, 58
- Filter Options, 57
- Format Options, 59

G

- Get
 - article, 46
 - cable, 47

H

- Help menu, 24

I

- Installation, 12

M

- Main form, 22

N

- Number Format Elements, 71
- Number Format Models, 71

O

- Object Information, 37
- Order information, 66

P

- Packing, 66
- Page
 - format options, 60
- Page Numbering, 60
- Partex dialog, 65

- PARTEX markings, 64

- Paste
 - cores, 39
- Print
 - report, 19
- Printing, 61

R

- Remove
 - cable/wire, 38, 42
- Report
 - print, 19
- Report dialog, 52
- Reports, 52
 - revision handling, 63
- Revision handling, 63
- Rules for auto numbering of wires, 27

S

- Select
 - filter options, 64
 - format options, 64
- Select Project Identity dialog, 51
- Sew order
 - edit, 15
- Sort
 - connections, 59
- Sorting, 37
- Start interconnect, 14
- System requirements, 12

T

- This Manual, 10

U

- Using filters, 45

V

Variables in *el*Master interconnect, 69

assign with automatic numbering, 16, 39
mark, 65
remove, 38

W

Wires